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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,771	01/23/2002	Che-Yu Li	H2022-00002	8735

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EXAMINER

PRASAD, CHANDRIKA

ART UNIT	PAPER NUMBER
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2839

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/055,771

Applicant(s)

LI ET AL.

Examiner

Chandrika Prasad

Art Unit

2839

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Response to the Amendments***

1. The reply filed 5/16/03 consists of amendments to claims 1, 3-17, 21, cancellation of claims 22-23, changes in the drawing and remarks related to rejection of claims. The claims are not allowable as explained below.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 4/11/03 contains references, which were cited by the examiner in the previous office action.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 6, 7, 11, 13 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Khandros et al.

Khandros (Figures 6, 7, 11-13, 20-22) shows a heat spreading interposer having a housing comprising of a laminated structure having a plurality of thermally conductive layers 103, 204, 159 and a dielectric layer 102, 202, 156 supported between a plurality of substrates (printed circuit boards) wherein the contacts 192, 207, 187 are flexible (compressible) and have one end protruding from one side of the housing and another end protruding from another side of the housing. The housing has a plurality of through holes with liners in thermal communication with the thermally conductive layers.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 3, 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khandros et al.

Khandros shows all the features of these claims as described in Paragraph 4 above except a plurality of dielectric layers, the material of the dielectric layer and thickness of the conductive layer. The use of thermally conductive insulating material is well known in the art of electrical connectors. It would have been obvious to one having ordinary skill in the art at the time of the instant invention to make the insulating layers thermally conductive because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ 416.

Furthermore, the use of a plurality of dielectric layer is well known as in the case of laminated circuit boards. It would have been obvious to one having ordinary skill in the art at the time of the instant invention to provide a plurality of dielectric layers because this would require a mere duplication of an essential part, which involves only routine skill in the art. St. Regis Paper Co. vs. Bemis Co. 193 USPQ 8.

As to claim 5, the instant invention does not provide any reasons or specific problem to be solved by a specific thickness of the conductive layer. It would have

Art Unit: 2839

been obvious to one having ordinary skill in the art at the time of the instant invention to make the conductive layer 0.001 to 0.005 inches thick because it has been held to be within the general skill of a worker in the art to select a specific thickness of the material on the basis of its suitability for the intended.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khandros et al. in view of Okoshi et al.

Khandros shows all the features of this claim as described in Paragraph 4 above except the thickness of the dielectric layer to be about 0.003 to 0.007 inches. The instant invention does not provide any reasons or specific problem to be solved by making these layers 0.003 to 0.007 inches thick. Okoshi shows the thickness of the dielectric layer to vary from 0.005 mm (0.0002 inches) to 3 mm (0.12 inches), which includes values between 0.003 inches and 0.007 inches. It would have been obvious to one having ordinary skill in the art at the time of the instant invention to make the dielectric layers of a specific thickness as shown by Okoshi because selecting a specific size involves only routine skill in the art.

8. Claims 8-10, 14-16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khandros et al. in view of Okoshi et al.

Khandros shows all the features of these claims as described in Paragraph 4 above except the wings projecting outward from the housing and bonded to the conductive layer. Okoshi shows the thermally conductive layers with wings 24, 32 and 32 projecting from outer edges of the layers and thus thermally bonded to the wings. It would have been obvious to one having ordinary skill in the art at the time of the instant

Art Unit: 2839

invention to provide wings on the Khandros's conductive layers as shown by Okoshi because this would increase the surface area of the conductive layers resulting in an increase in heat dissipating capacity.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khandros et al. in view of Mowatt et al.

Khandros shows all the features of this claim as described in Paragraph 4 above except the land grid array and pin grid array devices. The instant invention does not provide any reasons or specific problem to be solved by making having these devices. These devices are well known in the art of electrical connectors as shown by Mowatt having a land grid array mounted electronic device 56 as well as a pin grid array mounted electronic device 152. It would have been obvious to one having ordinary skill in the art at the time of the instant invention to use the Khandros's interposer between such devices because such devices are well known and widely used in the art of electrical connectors as shown by Mowatt.

#### ***Response to Arguments***

10. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2839

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Contact Information***


12. Any correspondence to this action may be mailed to:

**Commissioner for Patents  
Post Office Box 1450  
Alexandria, VA 22313-1450**

Hand-delivered responses should be brought to:

**Crystal Plaza 4, Fourth Floor (receptionist)  
2201 South Clark Place, Arlington, Virginia**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chandrika Prasad at (703) 308-0977. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild, can be reached at (703) 308-2710. The fax number for this Group is (703) 872-9318 (general) and (703) 872-9319 for after-final. Any inquiry of a general nature should be directed to the Group receptionist at (703) 308-1782.

  
**Chandrika Prasad**  
Patent Examiner  
July 18, 2003